

REMARKS

In the Final Office Action mailed November 5, 2002, the Examiner made final the rejection of claims 1-26 over the prior art reference. The rejections, insofar as they may be applied to the claims as amended, are respectfully traversed for the reasons indicated below. Reconsideration of the application and withdrawal of the rejections are respectfully requested.

Claims 1-26 remain in the case. Claims 1, 25 and 26 have been amended to place the case in condition for allowance or for better form on appeal, and now incorporate a portion of the language from dependent claim 18. As such, the claims as amended neither raise the issue of new matter nor present a new issue requiring further search or consideration.

Claims 1 – 26 stand finally rejected under 35 USC §103(a) over Fields et al., U.S. Patent No. 5,111,391.¹ For the reasons including, inter alia, those discussed below, each of independent claims 1, 25 and 26 is patentable over the applied references. Further, claims dependent from these independent claims are deemed patentable.

Withdrawal of Finality

In several instances, the first Office Action relied on the Examiner's personal knowledge or alleged well known facts. In each instance, applicants requested the Examiner to provide a citation to a reference or an affidavit from the Examiner, 37 CFR § 1.104(d)(2). MPEP § 2144.03. The traversal was made in connection with claims 1, 18, 25 and 26, and now is made in connection with claim 10. A detailed substantive response to the Final Office Action, including further traversal, is made below.

It is respectfully submitted that the rejections cannot be made final until such affidavit or reference is provided. Consequently, the Examiner is respectfully requested to withdraw the finality of the Office Action.

¹ The Final Office Action p. 20 has a clerical error referencing a § 102 rejection.

U.S. Patent 5,111,391, Fields et al.

U.S. Patent 5,111,391, Fields et al. ("Fields") is directed to "an improved system and method for the creation of staff schedules at remote locations that take into account location specific values and historical data, while simultaneously conforming to corporate policy regarding scheduling standards and labor regulations." (Col. 1, lines 8-14.) The Office Action has deemed the following disclosures to be particularly relevant, which are repeated here for convenience:

"The optimum schedules take into account: the tasks that need to be scheduled and when they should be scheduled; the skill levels of employees that are available to perform the tasks; the resources available to facilitate tasks; the relationships between tasks; calculations to combine unique location values with unique location historical data and corporate policy to determine the length, start time and positive and negative slide for a task; employee availability by day of the week, and hours of the day, skill level, and priority of seniority levels; and applicable 'state' labor regulations." (Col. 2, lines 17-28.) "The invention initially assigns employee names to the day with the least total employee availability, followed by the next most restrictive day and so on. Within a given day, employees names are assigned by skill level. Within a given skill level, the available employees on that day that can perform the skill level, will be sorted by their priority and the percentage of their minimum or maximum hours which have been already scheduled. Once all employees of equal skill and priority have reached their minimum requested hours for the week, the employees are sorted by preferences as the percentage of requested maximum hours for a week." (Col. 6, lines 51-65.) The invention also provides a file that includes employee information such as the employee's name, address, and pay rate. (Col. 6, lines 43-45.)

Independent Claim 1 in Contrast to Fields

Claim 1 stands finally rejected under 35 USC § 103(a) in view of Fields. This rejection, insofar as it may be applied to the amended claim, is respectfully traversed, for reasons including the following.

Claim 1(a) as amended recites "(a) sorting, in a predetermined order, available resources by last task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting, wherein the rate per task characterizes

the units processed in the task for a time period.” To the contrary of the First Office Action, column 2, lines 12-35 and column 6, lines 51-65 of Fields do not teach sorting resources by last task assignment, a number of tasks performable, rate per task, and cost per hour. In the cited portions of Fields, Fields teaches that optimum schedules should take into account the tasks needed to be scheduled and when they should be scheduled, employee skill level, resources for the tasks, relationship between tasks, certain unique location calculations, employee availability, and labor regulations. However, Fields neither teaches nor suggests that resources may be sorted as claimed.

Claim 1(a) as amended incorporates certain language from dependent claim 18. Dependent claim 18 recites, inter alia, a “number of RX’s processed in each task for each time period.” The First Office Action acknowledged that Fields does not teach volume data including the number of RX’s processed. Applicants’ response to the First Office Action pointed out that Fields does not address itself to a problem of numbers of RX’s, or even items of any kind, processed. On page 19 of the Final Office Action concerning claim 18, the Examiner contends that “it is irrelevant that Fields does not explicitly disclose the number of RX’s processed per time period. Fields discloses the idea of a task processed per a certain period since Fields discloses the percentage of time it takes an employee to complete a task.” It appears that the Examiner has considered units processed per task per time period, and determined that to be irrelevant.

The Applicants, however, state in the specification, page 37, “Significantly, we have determined that being able to perform substantially dynamic rescheduling and/or reallocating of resources on a day-to-day and even hour-by-hour basis is very important and provides unexpected benefits in controlling and/or managing, for example, pharmacy operations. For example, we have determined that, at times, work enters the pharmacy system in unexpected volumes that may require significant resource allocation and/or scheduling changes to accommodate same.”

Further, as explained in the specification, page 42, “it may be possible to process 2,000 pieces a minute for one class of tasks, but it may take an hour to process a single different task.” To the contrary of the Examiner’s contention in the Final Office Action, it would appear to be

very relevant how many units are processed in a time period. Fields' alleged disclosure of "the percentage of an employee's time that it takes to do a particular task (from 1% to 100%)" in a retail sale setting (col. 3 lines 29-31) does not teach or suggest the rate of units processed in a time period.² The Applicants identified the problem in their original specification, and the Examiner is respectfully requested to consider the asserted advantages of the claimed invention. Moreover, "all words in a claim must be considered in judging patentability." *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970). In view of certain language from claim 18 being incorporated into claim 1 as amended, the Examiner is respectfully requested to withdraw the rejection.

In response to Applicants' argument regarding claim 1(a), the Examiner now responds that the sorting of the resources is taught by Fields including sorting by rate per task. The Examiner states that "rate of accomplishment is the rate per task", confusing the percentage of an employee's time that it takes to work on a task with how fast a task is accomplished. As previously argued, the percentage of an employee's time that a task occupies is not the same as a "rate of accomplishment." Hence, Fields fails to teach or suggest sorting by, inter alia, rate per task as claimed.

Claim 1(b) of the present invention recites "(b) normalizing the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue." In both Office Actions, the Examiner admits that "Fields do not explicitly teach the method of normalizing". It should also be recognized that Fields does not expressly teach anything about a rate of available resources for a task. Nevertheless, in the First Office Action the Examiner reasons using personal knowledge that there is a motivation to combine the allegedly well-known technique of normalizing a queue by an average rate of the available resources for the task in the queue.

² The Office Action states that Fields discloses the percentage of time it takes an employee to "complete a task". To the contrary, Fields uses the word "do", not "complete". According to Fields, it is possible to schedule multiple tasks for an employee at the same time (see letter coded tasks in Fig. 3). That an employee's task may occupy 50% of their time does not imply that the employee "completes" the task twice as fast. For example, in the retail setting of Figure 3, the tasks denoted "S" and "P" can be done simultaneously by the same employee and hence one of these is 50% or less of capacity. Nevertheless, on occasion, two different employees are simultaneously doing the "S" task.

The assertion that normalizing a queue by an average rate of available resources for each task in the queue is a well-known technique was respectfully traversed by Applicants, and the Examiner was respectfully requested to supply an affidavit under 37 C.F.R. § 1.104(d)(2) or a reference to support the entire assertion, or to withdraw the argument. Building on the erroneous argument of “rate of accomplishment”, the Office Action states that “rate of an accomplishment is also the rate of availability of a resource. For example, if Mary can fill 60 prescription bottles in an hour, then Mary can complete a prescription bottle every minute and is available after a single minute ... Therefore Fields does teach the rate of available resources by teaching the percent of time needed to accomplish a task.” To the contrary, as explained above, Fields does not teach a “rate of an accomplishment”. Moreover, Fields does not teach “normalizing ... by dividing a current task queue by an average rate of the available resources for each task ...” as claimed. The Examiner responded that “Fields teaches of an average rate of a group, or queue, since the shifts are optimized”. As explained above, Fields does not teach of an “average rate” as explained by the Examiner. Column 3, lines 40-45 and Column 5, lines 8-34, disclosing how to “optimize schedule by shifts and breaks”, have nothing to do with normalization as claimed.

Moreover, in the First Office Action the Examiner leaps from the statement that “dividing each item by the average normalizes the items” to the conclusion that it would be obvious, for example, to divide a task queue by an average rate of available resources for each task in the queue. Assuming arguendo that the art teaches that one may normalize an item, such as a queue, by the average, that does not explain why one would look to the average rate of available resources for each task in the queue as claimed.

The Examiner argues in the Final Office Action that sorting of resources and determining at least one queue responsive to said sorting is taught in Fields. Applicants have closely reviewed the cited sections of Fields (Column 2, lines 12-35, Column 6, lines 51-65, and Column 3, lines 12-15), where it appears that Fields is placing tasks on a schedule, dividing them into shifts, and then assigning employee names to shifts. Merely placing tasks on a schedule prior to dividing into shifts and assigning employees names does not teach or suggest sorting, for example, by last task assignment, by a number of tasks performable, by rate (as amended); and determining at least one queue responsive to said sorting, as claimed.

Further, the Examiner was respectfully requested to explain what “average” is taught in the art for used in the allegedly well-known technique of normalizing. The Examiner was respectfully requested to provide a reference supporting this argument, or in the absence of the Examiner providing a prior art reference, Applicants requested the Examiner to provide an affidavit detailing why the claimed normalizing step would have been well known under 37 C.F.R. § 1. 104(d)(2). In the Final Office Action the Examiner cites Fields Column 3, lines 40-45, and column 5 lines 8-34, concerning dividing a preliminary schedule into shifts arguing that “Fields teaches all aspects of normalization”. This fails to take into consideration the invention as claimed. Moreover, this contradicts the statement in the First Office Action, repeated in the Final Office Action, that “Fields do not explicitly teach the method of normalizing” (Final Office Action page 3). Further, assuming arguendo that this is “well known” prior art, the Examiner should cite a reference or provide an affidavit. MPEP 2144.03. Hence, Applicants respectfully traverse the failure to do so.

Finally, the First Office Action claimed that the motivation for combining Fields with the allegedly well-known technique of normalizing at least one queue as claimed, is to normalize task rates “to quickly determine which tasks take a longer amount of time”. Applicants repeat the arguments already made in their prior response. Further, Fields does not include a queue of resources, but rather has tasks placed on a schedule, and hence fails to teach or suggest, inter alia, normalizing (as admitted by the Examiner), or the claimed at least one queue, or an average rate of available resources.

Claim 1(c) of the present invention recites “(c) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint.” As acknowledged in both the First and Final Office Actions, Fields does not teach normalizing and hence has no normalized queue. Consequently, as discussed in detail above, Fields fails to teach or even suggest this recited element.

Applicants have reviewed the other references of record, and do not believe that the other references remedy the deficiencies of the cited reference. Specifically, the art cited by the Examiner does not assign available resources with a predetermined normalized queue subject to at least one task constraint.

For at least these reasons, the combination of features recited in independent claim 1, when interpreted as a whole, is submitted to patentably distinguish over the cited references. The Examiner is respectfully requested to reconsider and withdraw the rejection.

Dependent Claims 2-24 in Contrast to Fields

With respect to the finally rejected dependent claims 2-24, Applicants respectfully submit that these claims are not only allowable by virtue of their dependency from independent claim 1, but also because of additional features they recite. Applicants repeat and expand on their prior discussion some of the dependent claims below, by way of example. The omission of a claim from the following discussion is not to be construed as an admission that the Office Action is correct.

Claim 2, for example, recites the step of “redetermining the at least one queue after assignment of the available resources,” and “designating the assigned resource unavailable until a predetermined time when the assigned available resource expires.” Fields neither teaches nor suggests redetermining the at least one queue as claimed, or designating the assigned resource as unavailable until a time when the resource expires, as further claimed.

Claim 5 recites that “the at least one task constraint includes at least one team assignment constraint, and the available resources are assigned to the at least one task until the at least one team assignment constraint is satisfied.” Fields neither teaches nor suggests anything about using a team assignment as a constraint. The Final Office Action argues that “task constraints include a team assignment constraint such as the skill level of the employee or the relationship between the different tasks.” To the contrary, employee skill level and task relationship are not the equivalent of a team assignment constraint. Fields does not concern itself with teams or team constraints. Hence, it is respectfully submitted that Claim 5 is neither taught nor suggested by Fields.

Claim 9 recites that “the predetermined normalized queue comprises a largest normalized queue.” Fields neither teaches nor suggests a normalized queue.

Claim 10 also recites normalizing. Fields neither teaches nor suggests normalizing. The Final Office Action does not address this argument vis-à-vis claim 9. Nevertheless, Applicants’ arguments concerning normalizing are incorporated herein. Further, claim 10 recites that the

resource allocation model “includes entities with variable attributes having variable quantities that transform through at least one network of nodes.” Nothing in the cited reference teaches or suggests that the resource allocation model includes a network of nodes. The First Office Action specifically cites Fields Col. 6, lines 51-65; however, this reference simply does not teach or suggest a resource allocation model as claimed and to the contrary seems to suggest very simply the use of files. The Final Office Action argues that a network of nodes is “inherent.” This argument is respectfully traversed, since Fields has no discussion relating to a network of nodes, whether explicit or implicit. If the Examiner maintains this argument, she is respectfully requested to detail the inherency reasoning or supply an affidavit of personal knowledge or an appropriate reference 37 CFR § 1.104(d)(2).

Claims 11-16 depend directly or indirectly from claim 10, and are deemed to be allowable for reasons including those discussed above.

Claim 17 recites that the available resources are characterized by certain information, one of which is “projected incoming volume by task and time”. The First Office Action cites Fields Col. 7, lines 18-22 as teaching this element. To the contrary, this portion references a value 35 (Fig. 3) “which constitutes a projected *total* business demand distributed by hour.” The Final Office Action argues that projected business demand by hour reveals projected incoming volume by task and time. This however, does not teach or suggest that available resources are so characterized as claimed, e.g., by task. Hence this and other elements recited in claim 17 fail to be taught or suggested by the cited reference.

Claim 18 recites that the resources are assigned using, inter alia, “number of RX’s processed in each task for each time period.” Both the First and Final Office Actions acknowledge that Fields does not explicitly teach volume data including the number of RX’s processed. There is nothing in the reference that would teach or suggest using numbers of RX’s processed. Indeed Fields addresses a problem that is unrelated to the number of RX’s, or even items of any kind, processed. The First Office Action then theorizes that it would be obvious that the number of tasks must be known, and that volume data would disclose the number of tasks to assign to resources. Assuming *arguendo* that it would be obvious and/or desirable to know how many tasks there are, that does not lead to the obviousness of the RX’s processed in

each task, as claimed. Again, the Examiner appeared to be using personal knowledge to support this rejection. Applicants previously requested the Examiner provide a prior art reference or an affidavit under 37 C.F.R. § 1.104 (d)(2) to support the rejection. In the Final Office Action, the Examiner states that the claim limitation is “irrelevant.” (The continued failure to provide the requested reference or affidavit is respectfully traversed.) The arguments above in connection with claim 1 are expressly incorporated herein. There is an entire claim element that the Final Office Action has declared irrelevant. To the contrary, all words in the claim must be considered.

Claim 22 recites that steps (a) through (c) are repeatedly performed until the end of a predetermined time period is reached. The Office Action cites Fields Col. 3, lines 46-67 as teaching that the steps “are repeated until closing time of each store location”. This rejection is respectfully traversed. For example, Fields states that “certain tasks can only be performed after another task has been completed, but before closing time for that location;” and “During the process of placing a task on a schedule, each group of relations [between tasks and events] are tested and if no relation is violated in that group, the task is placed on the schedule.” The Final Office Action argues that steps (a) through (c) are repeated until the predetermined closing time. To the contrary, it appears the Fields lacks, inter alia, a repeated steps of (a) sorting and/or of (b) normalizing. One advantage of this claimed invention that cannot be provided by Fields is that it permits dynamic re-scheduling on, e.g., an hour-to-hour basis, helpful e.g., in handling unexpected work volume, as pointed out in the specification. In sum, the reference neither teaches nor suggests that steps (a) through (c) are performed until the end of a predetermined time period is reached in combination with the remaining features of the claims.

Claim 24 recites that “the work producing system comprises a pharmacy.” Acknowledging that Fields is not directed to a pharmacy, the First Office Action argues that “a pharmacy is nothing more than a specialized system (i.e., for distributing pharmaceuticals)”. Apparently the First Office Action considers Fields to be specifically useful in a pharmacy, without further reasoning. To the contrary, staffing a pharmacy is more specialized than simply staffing Fields’ “multi-unit retail locations” (col. 1 line 15). One example of several problems identified in the background of the invention concerns “scheduling to substantially optimally

staff pharmacies on a day-to-day basis, and more particularly, to solving scheduling problems where resources perform a varying set of tasks and their individual rates (units/man hours) for each task vary.” Accordingly, the applicants “have determined that the use of such techniques is new to the managed care, health care and/or pharmacy industry” (specification pages 1, 7-8). Hence, it appears that the conclusion that Fields would be useful in a pharmacy is nothing more than an impermissible application of hindsight.

The Final Office Action responds that the claimed limitations reciting a “pharmacy” are irrelevant. To the contrary, the Examiner must consider each word in the claims. Moreover, the specification discusses, inter-alia, advantages, as the subject of the inventors’ Declaration, and is evidence to be considered in reaching a conclusion as to obviousness.

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejection and allow the claims.

Independent Claim 25 in Contrast to Fields

Claim 25 stands finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Fields. For the reasons discussed in connection with independent claim 1 and dependent claim 24, it is respectfully submitted that the combination of features recited in claim 25 as amended is patentable over Fields when interpreted as a whole. The Examiner is respectfully requested to withdraw the rejection of claim 25.

Independent Claim 26 in Contrast to Fields

Claim 26 stands finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Fields. For the reasons discussed in connection with independent claim 1 and dependent claim 24, it is respectfully submitted that the combination of features recited in claim 26 as amended is patentable over Fields when interpreted as a whole. The Examiner is respectfully requested to withdraw the rejection of claim 26.

Summary

In view of the above, Applicants submit that the combination of features recited in each of claims 1-26 is patentable over the prior art cited by the Examiner when each respective claim is interpreted as a whole.

Applicant respectfully submits that, as described above, the cited prior art does not show or suggest the combination of features recited in the claims. Applicant does not concede that the cited prior art shows any of the elements recited in the claims. However, Applicant has provided specific examples of elements in the claims that are clearly not present in the cited prior art.

Applicant strongly emphasizes that one reviewing the prosecution history should not interpret any of the examples Applicant has described herein in connection with distinguishing over the prior art as limiting to those specific features in isolation. Rather, Applicant asserts that it is the combination of elements recited in each of the claims, when each claim is interpreted as a whole, which is patentable. Applicant has emphasized certain features in the claims as clearly not present in the cited references, as discussed above. However, Applicant does not concede that other features in the claims are found in the prior art. Rather, for the sake of simplicity, Applicant is providing examples of why the claims described above are distinguishable over the cited prior art.

Applicant wishes to clarify for the record, if necessary, that the claims have been amended to expedite prosecution. Moreover, Applicant reserves the right to pursue the original subject matter recited in the present claims in a continuation application.

Any narrowing amendments made to the claims in the present Amendment are not to be construed as a surrender of any subject matter between the original claims and the present claims; rather merely Applicant's best attempt at providing one or more definitions of what the Applicant believes to be suitable patent protection. In addition, the present claims provide the intended scope of protection that Applicant is seeking for this application. Therefore, no estoppel should be presumed, and Applicant's claims are intended to include a scope of protection under the Doctrine of Equivalents.

For all the reasons advanced above, Applicant respectfully submits that the rejections have been overcome and should be withdrawn.

For all the reasons advanced above, Applicant respectfully submits that the Application is in condition for allowance, and that such action is earnestly solicited.

Conclusion

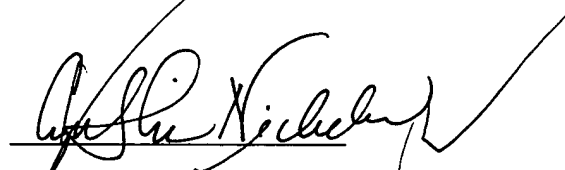
For all the reasons advanced above, Applicants respectfully submit that the rejection of claims 1-26 must be withdrawn. Consequently, issuance of a Notice of Allowance is respectfully requested.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fee that may be required for this Amendment, or credit any overpayment to Deposit Account No. 08-0219.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to deposit account no. 08-0219.

Respectfully submitted,



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Claims

1. (Amended) A method of allocating resources including scheduling jobs from among a plurality of resources of a work-producing system, said method comprising the steps of:

(a) sorting, in a predetermined order, available resources by last task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting, wherein the rate per task characterizes the units processed in the task for a time period;

(b) normalizing the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue; and

(c) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint.

2. A method of allocating resources according to claim 1, further comprising the step of redetermining the at least one queue after assignment of the available resources, and designating the assigned resource unavailable until a predetermined time when the assigned available resources expires.

3. A method of allocating resources according to claim 1, further comprising the step of incrementing time to time of a next event.

4. A method of allocating resources according to claim 1, wherein the at least one task constraint includes maximum resource capacity, defined start and end times, and scheduled down time.

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5. A method of allocating resources according to claim 1, wherein the at least one task constraint includes at least one team assignment constraint, and the available resources are assigned to the at least one task until the at least one team assignment constraint is satisfied.

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6. A method of allocating resources according to claim 1, wherein said assigning step (c), further comprises the steps of assigning the available resources to the at least one task for a maximum time of task, and removing the at least one task from a resource skill set.

7. A method of allocating resources according to claim 1, wherein the at least one constraint includes an end of shift constraint, and wherein the available resources are not assigned to the at least one task when the assignment violates the end of shift constraint.

8. A method of allocating resources according to claim 1, wherein the predetermined order comprises an ascending order.

9. A method of allocating resources according to claim 1, wherein the predetermined normalized queue comprises a largest normalized queue.

10. A method of allocating resources according to claim 1, wherein said sorting step (a), said normalizing step (b) and said assigning step (c) are performed according to a resource allocation model, and

wherein the resource allocation model includes entities with variable attributes
5 having variable quantities that transform through at least one network of nodes.

11. A method of allocating resources according to claim 10, wherein each node of the at least one network of nodes includes an associated set of attributes and parameters.

12. A method of allocating resources according to claim 11, wherein the attributes are qualitatively defined through at least one of nominal, graphical and symbolic conventions.

13. A method of allocating resources according to claim 12, wherein the available resources include the attributes of the nodes, and the available resources undergo transformational processes arriving at least one arbitrary state or passing through a series of states that may become the attributes of the resources.

14. A method of allocating resources according to claim 11, wherein the parameters are specified as at least one of inputs, outputs, capacities, operational processes, functional behaviors, movement logics, and other dynamic parameters.

15. A method of allocating resources according to claim 10, wherein the resource allocation model stores at least one of historical values, theoretical values, the attributes and constellations of the nodes, and wherein the resource allocation model provides multiple bases of comparison for monitoring, measuring, and evaluating real-
5 time operational data and operational performance for management functions.

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16. A method of allocating resources according to claim 10, wherein the resource allocation model includes significance and performance criteria, associated tableaux and scenarios, and wherein abstract model elements are stored as at least one of the parameters and the attributes, and as at least one of functional, logical, graphical and symbolic forms.

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17. A method of allocating resources according to claim 1, wherein the available resources are characterized by the following information:

- person identifier, person name, person type, shift assignment by day of week, task preference,
- 5 • shift name, shift start time, shift end time, lunch start, break 1 start, break 2 start,
- person type categories, eligible tasks,
- task name, rate per task, task capacity, task color for Gantt chart, flow percentages between tasks,
- 10 • projected incoming volume by task and time, and
- start of day queues in each task.

18. A method of allocating resources according to claim 1, wherein said assigning step (c) assigns the available resources using at least one of the following outputs:

- people allocation: number of people assigned to each task for each time period,
- volume data: number of RX's processed in each task for each time period,
- queue data: queue length for each task area by time period, and
- Gantt chart: person task assignment for each time period.

19. A method of allocating resources according to claim 1, wherein said assigning step (c), further comprises the steps of assigning the available resources to a varying set of tasks having varying individual rates.

20. A method of allocating resources according to claim 1, wherein said assigning step (c), further comprises the steps of assigning the available resources to the at least one task with a work flow between tasks following a Markov Chain.

21. A method of allocating resources according to claim 3, wherein the next event includes at least one of: a resource or task that becoming subsequently available, incoming work, a queue reaching zero, and a minimum time in the task.

22. A method of allocating resources according to claim 1, further comprising the step of repeatedly performing said steps (a) - (c) until the end of a predetermined time period is reached.

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23. A method of allocating resources according to claim 1, further comprising the step performing the at least one task responsive to the resource assigned in said assigning step (c).

24. A method of allocating resources according to claim 1, wherein the work producing system comprises a pharmacy.

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25. (Amended) A method of allocating resources including scheduling jobs from among a plurality of resources of a work-producing system, wherein the work producing system comprises a pharmacy, said method comprising the steps of:

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(a) sorting, in a predetermined order, available resources to be utilized in the pharmacy by at least one of a task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting, wherein the rate per task characterizes the units processed in the task for a time period;

(b) normalizing the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue; and

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(c) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint.

26. (Amended) A computer program memory, storing computer instructions to allocate resources including scheduling jobs from among a plurality of resources of a work-producing system, wherein the work producing system comprises a pharmacy, the computer instructions including:

5 (a) sorting, in a predetermined order, available resources to be utilized in the pharmacy by at least one of a last task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting, wherein the rate per task characterizes the units processed in the task for a time period;

10 (b) normalizing the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue; and

(c) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint.